

## NOTES ICHTYOLOGIQUES

THE OCCURRENCE OF *SPHOEROIDES CUTANEUS* (GUNTHER, 1870) (PISCES, TETRAODONTIDAE) IN THE MIDDLE-WEST MEDITERRANEAN SEA. Marino VACCHI, Istituto di Tecnologia della pesca e del pescato, C.N.R., Mazara Del Vallo, Italie ; and Angelo CAU, Istituto di Zoologia dell'Università di Cagliari, Italie.

**ABSTRACT.** — This paper reports the capture of 7 specimens of *Sphoeroides cutaneus* (Günther, 1870) (Pisces, Tetraodontidae), 2 from the waters of the Channel of Sicily and 5 from the Gulf of Cagliari. The Mediterranean Sea, and the waters off Portugal and Azores, are the northern limits of the distribution area of this species. They are also the limits of the distributional ranges of the tropical and subtropical ichthyofauna from the eastern Atlantic Ocean and the southeastern African coast.

**RÉSUMÉ.** — Cette note relate la capture de 7 exemplaires de *Sphoeroides cutaneus* (Günther, 1870) (Pisces, Tetraodontidae), 2 provenant du Détrict de Sicile et 5 du Golfe de Cagliari. La Méditerranée, et les eaux au large du Portugal et des îles des Açores, sont les limites nord de la distribution géographique de cette espèce. Ce sont aussi les limites de l'aire de répartition de l'ichtyofaune tropicale et subtropicale de l'océan atlantique oriental et de la côte africaine sud-est.

**Keywords :** Pisces, Tetraodontidae, *Sphaeroides cutaneus*, new records, geographical distribution.

Specimens of *Sphoeroides cutaneus*, a Tetraodontidae typical of the ichthyofauna of Western Africa, were captured in the Mediterranean Sea, both from the Sicilian Channel and the Gulf of Cagliari. The presence of that species, previously unknown in the Mediterranean, has been ascribed to the casual transport through the strait of Gibraltar. The availability of several specimens of *S. cutaneus* allowed the study of some little known aspects of its

biology, since very few specimens have been captured even in the typical distribution area.

#### Fishing sites

Two specimens were captured by trawl-net in the waters of the Sicilian Channel, one at 115 m and the other at 140 m depth, about 4 miles West of the Pantelleria bank. Additional specimens from Sardinian waters were found in nets of trawlers operating in the Gulf of Cagliari, four of them were collected at depths ranging from 40 to 70 m, and one at 170 m.

#### Synonymy

*Tetronotus cutaneus* : Günther, 1870 (in Fowler, 1936); Mellis, 1875 (in Fowler, 1936); Barnard, 1927 (in Cavario et al., 1980).

*Liosaccus cutaneus* : Fowler, 1928, 1936 ; Goncalves, 1941; Cadenat, 1950; Tomiyama et al., 1958; Poll, 1959; Blache et al., 1970.

*Liosaccus glaber* (*cutaneus*) : Cadenat and Marchal, 1963.

*Sphaeroides* (*Sphaeroides*, *Sphaeroide*) *cutaneus* : Smith, 1950; Gosline and Brock, 1960; Calvario et al., 1980; Oliver, 1981; Moreno and Roca, 1984.

*Sphoeroides glaber* : Thomson, 1978.

In a review of the Suborder Tetraodontoides based on skeletal characteristics, Fraser-Brunner (1943) established synonymy between the genera *Liosaccus* and *Sphaeroides* ; he did not deem the absence of dermal spinules in *L. cutaneus* a sufficient characteristic for the provision of this species with a separate genus.

#### Morphology of the species

The description is based on a specimen from the Channel of Sicily deposited at the Museo Civico di Storia Naturale, Verona. Total length 318 mm.

- Stout-looking and rather long body : broad abdomen with strong walls, able to expand greatly.
- Large head : snout showing a convexity in its upper profile ; terminal mouth (at the tip of

Table 1. - Body proportions and main morphological characteristics of *S. cutaneus* specimens from various geographic areas.

	MEDITERRANEAN SEA (Vacchi and Cau, present report)	PORtUGUESE WATERS (Calvario et al. 1980)	AFRICAN ATLANTIC OCEAN (Poll, 1959)	AZORES (Fowler, 1936)	HAWAII (Fowler, 1928)
Total length (mm)	137	181	318	361	125
Standard length/head length	2.54	2.55	2.48	3.05	2.25
Head length/head width			1.65	1.71	2.51
Head length/head height			1.04	1.33	2.53
Snout length/eye diameter	1.76	2.16	2.45	2.09	1.55
Head length/eye diameter	4.25	4.73	5.55	4.62	4.80
Interorbital space/head length	2.23	2.36	2.64	2.05	2.28
Preorbital height/head length			1.35	1.60	2.00
Gill opening/eye diameter			1.30	1.10	1.35
Total length/head length	2.95	3.03	2.86	3.45	2.60
Total length/head height			3.00	3.47	3.16
Snout length/head length	2.41	2.18	2.26	2.20	2.00
Dorsal fin rays	8	9	8	8	9
Anal fin rays	10	8	8	9	7
Pectoral fin rays	15	15	14	15	13
				4 specimens 113 to 212	248
					342

the snout) with thick fleshy lips scattered with papillate nostrils placed on two fleshy peduncles at the centre of the snout and a little below the upper edge; small oval eyes; interorbital space half-occupied by a slight median concavity.

- Dorsal and anal fins similar, inserted in the rear third of the body, the dorsal fin slightly forward; wide pectoral fins, their first ray curved downwards in the distal position; subtruncated caudal fin.
- Completely smooth skin; absence of dermal spinules.
- Grey-olive colour of the dorsum with dark spots irregularly scattered on the median portion; whitish abdomen and fins; the upper part of the caudal fin darker than abdomen and other fins.

Body proportions and anatomical characteristics of our specimens were consistent with those of specimens of similar size captured in other areas (Table I) and described in detail by Fowler (1928, 1936), Poll (1959) and Calvario *et al.* (1980).

Ratios between some body measures and body height seem to be of little taxonomic value. The latter, in fact, is extremely variable because of the variable degree of dilatation of the abdomen.

Slight differences in colour and morphology (eye size, fin shape) are not sufficient to differentiate Mediterranean specimens from those of other geographical areas.

Finally, we wish to emphasize the body range of the captured specimens (Table I). The largest specimen from the Mediterranean Sea (361 mm) had a length greater than the maximum length (342 mm, Fowler, 1928) known so far for this species.

#### Geographical distribution

From the data available in the literature, *S. cutaneus* seems to have a range typical of the ichthyofauna of the tropical and subtropical eastern Atlantic Ocean and of the eastern coast of South Africa.

Fowler (1936) included it (as *Liosaccus cutaneus*) among the marine fish fauna of West Africa and detailed its characteristics based on a specimen obtained near the Azores. Most other reports refer to captures in the African Atlantic waters (Poll, 1959; Blache *et al.*, 1970); Cadenat, (1950) (Table II).

Table II. – Geographic distribution of *S. cutaneus*

#### EAST ATLANTIC OCEAN (tropical and subtropical)

St. Helena and	
Cape of good Hope	Günther, 1870
St. Helena	Meliss, 1875
St. Helena	Cunningham, 1910
Azores	Fowler, 1936
South Africa	Barnard, 1927
South Africa	Von Bonde, 1923
South Africa	Smith, 1950
Portugal	Goncalves, 1941
Portugal	Calvario <i>et al.</i> , 1980
Senegal	Cadenat, 1950
Gulf of Guinea	Poll, 1959

#### MEDITERRANEAN SEA

Balearic Islands	Oliver, 1981
Balearic Islands	Moreno and Roca, 1984
Southern Sardinia	
Sicilian Channel	present report

#### OTHER AREAS

Hawaii	Fowler, 1928
Hawaii	Gosline and Brock, 1960
Japan	Tomiyama and al., 1963
Australia	Thomson, 1978

The northern border of this distribution seems to be the 40<sup>th</sup> parallel N, coinciding with Azores and Portugal waters, where 3 specimens have been recorded (Goncalves, 1941; Calvario *et al.*, 1980).

*Sphoeroides cutaneus* has been reported only twice before in the Mediterranean Sea, off the Balearic Islands (Oliver, 1981; Moreno and Roca, 1984).

Oliver, 1981, speculated that this specimen originated from the development of a larva or young casually transported by movement of the Atlantic water mass through the strait of Gibraltar. Our captures of 7 specimens of different sizes far from the Strait of Gibraltar lead us to believe that the Mediterranean Sea, at least the Western basin, must be included in the distribution area of this species.

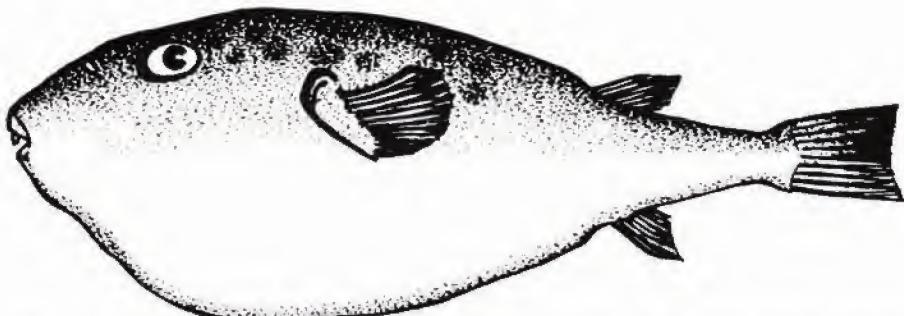


Fig. 1. — *Sphoeroides cutaneus* (Günther, 1870), specimen coming from Sicilian Channel. Total length : 318 mm (Drawing by A. Abella).

Confirmation of the non casual presence of this fish in the Mediterranean Sea can also be seen from the fact that fishermen of the Gulf of Cagliari distinguish it from the other « Puffers » because of its characteristic appearance when the abdomen swells. Reports from the Pacific Ocean (column 3, Table II) are insufficient to enable us to define a possible broader distribution area.

The report of *S. cutaneus* in the waters off Brazil and Antilles, (Cadenat and Marchal, 1963) was intentionally omitted from the table. In our opinion, an error occurred in the construction of a species-distribution table (Cadenat and Marchal, 1963, page 1304, line 12). This conclusion seems warranted by the data in bibliographic references cited by the same authors.

This species possibly has a wide circum-tropical distribution (Fowler, 1928, 1936) but the identity of specimens from both Atlantic and Pacific Ocean remains to be ascertained.

#### Vertical distribution

Three of the mediterranean specimens of *S. cutaneus* (the two from the Sicilian Channel and one from Sardinian waters) were captured at 100 m and 200 m depth, a range so far reported for Atlantic specimens (Blache *et al.*, 1970 ; Poll, 1959 ; Calvario *et al.*, 1980). Only one specimen (Goncalves, 1941) was taken at the surface, near the estuary of the river Tagus (Portugal), and others at comparatively shallow levels, at 80 m in the Spanish waters (Oliver, 1981) and between 40 and 70 m in the Gulf of Cagliari (as reported here in).

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Au cours de la campagne de prospection par chalutages (Geryon II) effectuée à bord du navire océanographique « Thalassa » du 14 mai au 4 juin 1985 sur le banc Porcupine entre 51°N et 53°30'N, de 200 à 1000 m de profondeur, nous avons capturé 2 espèces nouvelles pour la faune irlandaise : *Facciolella oxyrhyncha* et *Chiasmodon niger*. En outre, un *Chaunax pictus* a été pris vers la même époque et dans la même région par le « Nol Zent » de Saint Guénolé.

*Facciolella oxyrhyncha* (Bellotti, 1883)

Le 1er juin 1985 un *Facciolella oxyrhyncha* de 355 mm Lst (361 mm Lt) était capturé à la station « Thalassa » 252 (52°05'N 12°39'W) vers 890 m de profondeur (de 885 à 893 m). Cette espèce, dénommée *F. physonema*, n'était connue dans l'Atlantique nord-est que des côtes sud du Portugal et de Madère (Saldanha & Blache, 1968).

*Chiasmodon niger* Johnson, 1863

Le 28 mai 1985 un *Chiasmodon niger* de 108 mm Lst (125 mm Lt) était capturé à la station « Thalassa » 230 (52°37'N 14°57'W) vers 815 m (de 813 à 820 m). Cette espèce signalée au sud dans le golfe de Gascogne et au nord par un seul exemplaire à l'est du Groenland (Krefft, 1983) n'était pas connue dans les eaux irlandaises.

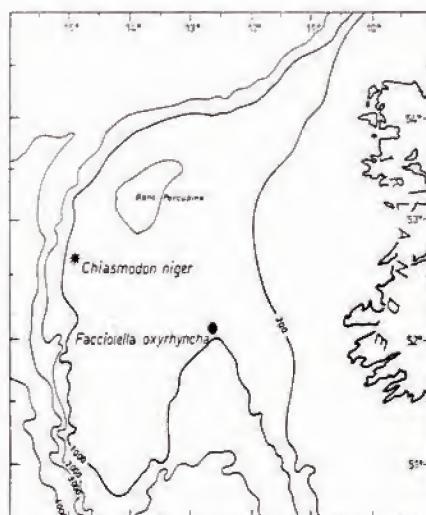
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CAPTURE DE TROIS ESPÈCES NOUVELLES POUR LA FAUNE ICHTYOLOGIQUE IRLANDAISE.

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ABSTRACT. — *Facciolella oxyrhyncha* (Bellotti, 1883) (Pisces, Anguilliformes, Nettastomatidae), *Chiasmodon niger* Johnson, 1863 (Pisces, Perciformes, Chiasmodontidae) and *Chaunax pictus* Lowe, 1846 (Pisces, Lophiiformes, Lophiidae) are recorded for the first time, off the waters of Ireland.

*Cybium*, 1986, 10(2) : 203-204.



*Chaunax pictus* Lowe, 1846

Vers le début du mois de juin 1985 un *Chaunax pictus* de 203 mm Lt était pêché